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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------|------------------|
| 10/816,750 | 04/02/2004 | Ricky Dean Madson | 16571-US | 1145 |
| 30689 | 7590 | 06/09/2006 | EXAMINER | |
| DEERE & COMPANY ONE JOHN DEERE PLACE MOLINE, IL 61265 | | | VANAMAN, FRANK BENNETT | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3618 | |

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,750

Applicant(s)

MADSON ET AL.

Examiner

Frank Vanaman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 39 and 46-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24, 26-38 and 40-45 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restriction

1. Applicant's election without traverse of Species II in the reply filed on March 27, 2006 is acknowledged.

Applicant has identified the claims readable as including 1-38 and 40-65. Claim 39 is identified as being directed to a non-elected species (i.e., the diverter plate including diffuser screens). Claims 46-65 additionally include limitations associated with the non-elected species (see, at least, claim 46, lines 14-17), as such, these claims are understood to be directed to the non-elected species and are withdrawn from consideration.

An office action on the merits of claims 1-38 and 40-45 follows.

Claim Rejections - 35 USC § 112

2. Claims 3, 5, 10, 13-15, 18, 20, 23, 37, 41, and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A number of terms lack a clear antecedent basis in the claims: claim 3, lines 2-4 (also note claim 10) "the main body portion"; claim 5, line 2 and claim 14, lines 2-3, "the main body"; in claim 13, "the main section and removable section"; in claim 18, line 3 "the central aperture" (note that claim 18 does not depend from claim 4), claim 20, line 2, "the hood assembly" (claim 1 reciting a hood, but not a hood assembly); claim 37, line 3, "the fan shroud"; claim 37, line 4, "the hood"; claim 41, "the central aperture". In general, care should be taken to ensure that terms recited in the claims are provided with an adequate antecedent basis. In claims 13, 15 and 37, the particular nature of the appropriateness of the respectively recited fasteners and screens is not set forth (in this case, applicant may desire to delete "appropriate"); in claim 23, line 2, it is not entirely clear what is meant by "naturally radial".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 20, 21, 27, 32, 33, 44 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Edmond et al. (US 5,590,624). Edmond et al. teach a vehicle cooling package including a heat exchanger assembly (52, 54) fluidly connected with an engine portion of the vehicle in order to operate, a unitary fan shroud (56) mounted adjacent the heat exchanger and connected thereto (note bracket, figure 2); the shroud having a diverting surface (62), a diverter plate (46) with a central aperture (88; additionally 55) mounted adjacent the fan shroud and spaced therefrom, having at least one flange (bottom side of 90) extending in a perpendicular direction to the general plane of the forward extent of the diverter, a fan (48, 65) mounted for rotation between the shroud and plate; a vehicle hood (22, 24) enclosing the assembly; having air discharge openings including diffuser screen or grid portions (32) extending along at least the top, and further including sides extending closely proximate a lower end of the space between the plate and shroud (note figure 1), the lower section of the grid portions (32) positioned closely proximate a front hood support (e.g., 34) to the breadth claimed; the fan shroud diverting surface having an angle (compare 62 and flow indicating angle) which closely matches the discharge direction of the fan element (48, 65; also note col. 3, lines 46-55), the diverter plate comprising an angle corresponding closely to the discharge of the fan (48, 65); the air being discharged at a comparatively high velocity compared with a discharge arrangement not including the fan portions, shroud and diverter plate; the shroud having an aperture defined by a circumferential wall (58) which extends out from a main portion (60), the diverting surface (62) extending in an opposing direction therefrom; the components being mounted to a vehicle frame (not referenced, shown proximate numerals 58, 60, 62, figure 2);

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5. Claims 27, 29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Albright et al. (US 2003/0136544). Albright et al. teach a fan shroud having a main body portion (66, 69), with a fan aperture therein (62), which is defined by a circumferential wall (68A) extending outwardly from the shroud body, further including a diverting surface extending from the circumferential wall (e.g., towards 69A), at an angle compared to the fan axis (note figure 9), having a section (e.g., between 68A and 69) corresponding to the fan discharge; and further including at least one mounting flange (69B - note col. 3, lines 66, 67), the corners of the shroud including recess portions (e.g., proximate the arrow end of the lead line for element 50, figure 3; additionally note figure 7) which accommodate plumbing portions (inlet and outlet lines of radiator 48).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8, 10, 14, 16, 17, 23, 24, 36, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond et al. (Cited above).

Claim 8: The reference to Edmond et al. is discussed above and fails to teach the shroud as being molded from a thermoplastic or thermoset material. The molding of vehicle ducts and diverters from thermoplastic or thermoset materials is old and well known, for the purpose of providing inexpensive molded objects of comparatively high strength and low weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the shroud from a molded thermoplastic or thermoset for the purpose of inexpensively providing the shroud without substantially increasing the weight of the vehicle.

Claims 10, 17, 40: The reference to Edmond et al. is discussed above and fails to teach the portions of the shroud and/or diverter plate having stiffening ribs. Stiffening ribs on structural items are notoriously old and well known, being provided for the advantage of

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increasing stiffness while not appreciably increasing weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide stiffening ribs on the shroud portion and/or plate portion, for the purpose of rendering either or both elements more rigid without substantially increasing their respective weights.

Claims 14, 36: While teaching at least one perpendicular flange, the reference to Edmond et al. fails to teach a pair thereof. The duplication of already-taught parts is old and well known, for the purpose of amplifying or enhancing the effect of the existing part, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide at least a pair of perpendicular flanges instead of the single shown flange of Edmond et al. for the purpose of providing greater surface area for mounting, or for rigidifying the edges of the plate.

Claims 16, 38: The reference to Edmond et al. fails to specifically teach plumbing recesses in the plate, however in view of at least one plumbing element traversing the plate (note figure 2, upper portion thereof), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a recess or aperture in the plate so as to allow the plumbing element to pass through the plate.

Claim 23: The reference to Edmond et al. fails to teach the specific angle of the fan discharge. Inasmuch as Edmond et al. do teach that the fan has a discharge with both axial and radial components, and inasmuch as the out flow is intended specifically to be directed towards surfaces generally perpendicular to the axial direction, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust an angle of discharge of the fan to be at an angle of approximately 60 degrees to 80 degrees for the purpose of directing a substantial portion of the air flow towards the already-taught outputs.

Claim 24: The reference to Edmond et al. fails to teach the diverting surface of the shroud and diverter plate as extending completely to the hood portion. In that Edmond et al. are specifically focused on the control of flow through the heat exchangers and specific draw of flow through the engine (e.g., through 55), it would have been obvious to one of ordinary skill in the art at the time of the invention to prevent flow through

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portions of the various compartments except where taught (i.e., through the fan shroud, through the apertures 55) for the purpose of precisely controlling the flow through the assembly, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to extend the non-flow-inducing portions of the shroud and diverter plates to the hood structure, thus promoting flow only through the taught apertures, allowing precise control over the flow.

8. Claims 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond et al. in view of Hitt et al. (US 6,622,783). The reference to Edmond et al. fails to teach the provision of the shroud as mountable to the heat exchanger frame, wherein the heat exchanger extends to be partially disposed within the shroud, the shroud including one or more mounting flanges which mate with portions of the heat exchanger frame, the shroud including plumbing recesses. Hitt et al. teach a fan shroud (12) for use in a vehicle cooling system, the shroud including a plurality of flange portions (38, 44) which mate with a heat exchanger (13) and its frame (20, 50), with at least a portion of the heat exchanger being disposed within the shroud (figures 4, 5); the shroud including plumbing recesses (between 44 and 44, for example). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the shroud of the vehicle system of Edmond et al. in the format taught by Hitt et al. to include the mating flanges, plumbing recesses and a portion of the heat exchanger disposed within the shroud, for the purpose of providing a secure connection between heat exchanger and shroud, and to ensure efficient air flow through the exchanger.

9. Claims 12, 13, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond et al. in view of Haupt (US 4,018,297). The reference to Edmond et al. fails to teach the diverter plate as including a main section and removable section, wherein the sections are provided with mating flanges to facilitate attachment to one another. Haupt teaches a shroud/diverter element (6 in general) for use in an automotive cooling arrangement; the element provided with a plurality of sections (10, 12, 15, 16), at least one (10) being removable from the remaining portions (figure 2), the sections including mating flanges (22, 23, figure 4, for example) allowing fasteners (13, 18) to be used to connect the sections together. It would have been obvious to one of

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ordinary skill in the art at the time of the invention to make the diverter taught by Edmond et al. from a plurality of sections as taught by the diverter/shroud of Haupt, for the purpose of allowing the element to be installed/removed without disassembly of the remaining portions of the heat exchange assembly, and for allowing easy access to working elements contained behind it

10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond et al. in view of Gielda et al. (US 5,626,185). The reference to Edmond et al. fails to teach the provision of wheel well louver discharge vents aligned with the region between the shroud and diverter. Gielda et al. teach a vehicle airflow arrangement including a wheel well louver (37) for allowing heated air to be removed from a heat-exchange and engine compartment area. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the assembly taught by Edmond et al. with a wheel well louver arrangement connecting the region between the shroud and diverter to a wheel well, for the purpose of exhausting the heated air and preventing recirculation of already-heated air (specifically taught by Gielda), allowing the vehicle to operate more efficiently.

11. Claims 26 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edmond et al. in view of Yamashita et al. (US 5,689,953). The reference to Edmond et al. fails to teach the provision of a port in the diverter for directing fan discharge air to a selected component. Yamashita et al. teach a diverter (e.g., 20) for a fan system in a vehicle heat exchanging arrangement, wherein a flow port (28) is provided in addition to a means of removing the bulk of the heated air from the vehicle compartment (e.g., 20b), the flow port being arranged to direct a portion of the air to an pre-selected component (16) for cooling thereof. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide at least one additional port as taught by Yamashita et al. in the diverter taught by Edmond et al., directed to a pre-selected component, for the purpose of providing a smaller quantity of ventilation air to cool at least a portion of the pre-selected component.

12. Claims 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albright et al.

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Claim 28: The reference to Albright et al. is discussed above and fails to teach the shroud as being molded from a thermoplastic or thermoset material. The molding of vehicle ducts and diverters from thermoplastic or thermoset materials is old and well known, for the purpose of providing inexpensive molded objects of comparatively high strength and low weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the shroud from a molded thermoplastic or thermoset for the purpose of inexpensively providing the shroud without substantially increasing the weight of the vehicle.

Claim 30: The reference to Albright et al. is discussed above and fails to teach the portions of the shroud having stiffening ribs. Stiffening ribs on structural items are notoriously old and well known, being provided for the advantage of increasing stiffness while not appreciably increasing weight, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide stiffening ribs on the shroud portion, for the purpose of rendering the shroud more rigid without substantially increasing its weight.

Allowable Subject Matter

13. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 15, 18, 19, 37, 41, and 42, as best understood, would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. As regards claims currently rejected under 35 USC §112, second paragraph, please note that rejections under 35 USC §102 and 103 should not be based upon considerable speculation as to the meaning of the terms employed and assumptions as to the scope of the claims when the claims are not definite. See *In re Steele* 305 F.2d 859, 862, 134 USPQ 292, 295 (CCPA 1962). When no reasonably definite meaning can be ascribed to certain terms in a claim, the subject matter does not become anticipated or obvious, but rather the claim becomes indefinite. See *In re Wilson* 424 F.2d 1382,

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1385, 165 USPQ 494, 496 (CCPA 1970). As such the currently pending claims may be subject to prior art rejections not set forth herein upon the clarification of the claim language.

Conclusion

16. Applicant is reminded that claims 39 and 46-65 are withdrawn from consideration at this time.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Beck (US 4,173,995), Moore (US 4,382,481), Charles (US 5,495,909), Cottereau et al. (US 6,302,228), Schmitz et al. (US 6,523,507), and Koyama (US 6,907,916) teach vehicle cooling arrangements of pertinence.

18. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

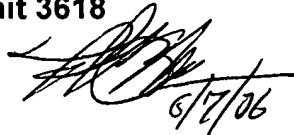
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F. VANAMAN
Primary Examiner
Art Unit 3618



6/17/06